هيئة دبي للطيران المدني
DUBAI CIVIL AVIATION AUTHORITY

Recreational UAS Pilot Recertification Course

Comprehensive Online Training in Compliance with DCAA Guidelines

Learning Objectives

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By completing this course, you will be able to:

- Understand updated DCAA rules for recreational drone use in Dubai
- Identify and fly only within approved Green Zones using official maps
- Recognize key RPAS components and safe handling procedures
- Follow best practices for safe and legal drone operations
- Avoid common violations and restricted zones
- Manage signal loss using failsafe features effectively
- Pass the final assessment to renew your DCAA certification

Introduction

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An RPAS, or Remotely Piloted Aircraft System, refers to an unmanned aircraft that is operated remotely by a pilot using a radio control system. Commonly known as

- **Drone**
- **UAV (Unmanned Aerial Vehicle)**
- **UAS (Unmanned Aircraft System)**

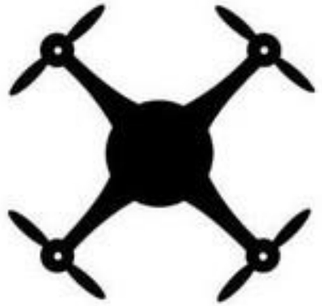
CATEGORIES
RPAS are categorised using its:

a. MTOW (Maximum Take Off Weight) :
This refers to the total weight including maximum payload of the aircraft.

b. Type :
The two most common forms of RPAS are:

(Standard Aviation categrorise RPAS into weight and type)

- **Multi Rotor :** Vertical take off and landing system
- **Fixed Wing :** Takes off from a runway or launch pad, has wings similar to a conventional airplane



Multirotor

Fixed-Wing

RPAS Hardware

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➢ In this section we look at the main components of an RPA system.

FRAME:

- This component connects all of the other components.
- Frames can be of various size, types or shapes.

MOTORS:

- The motors spin the propellers.
- The motors are rated using kilovolts (Kv) which means that the higher the Kv the faster the motors spin.

FLIGHT CONTROLLER:

- The flight controller is most commonly installed on the main frame, which acts as the brain of the drone.

ESC (ELECTRONIC SPEED CONTROLLER):

- The ESC's are installed on the arm of the aircraft.

PROPELLER:

- Propellers create the lift needed for the RPAS.
- They are of 2 types (Clockwise and Counter Clockwise)

BATTERY:

- RPA systems are powered by LiPo (Lithium Polymer) batteries also installed on the mainframe.

Radio Controls

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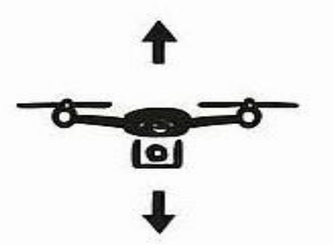
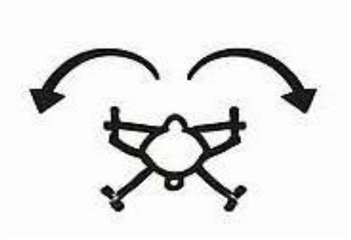
THROTTLE (USING LEFT JOYSTICK)

By pushing the left joystick up the aircraft shall move upwards (increase altitude*) and by pushing this stick down, it will move downwards (decrease altitude*).



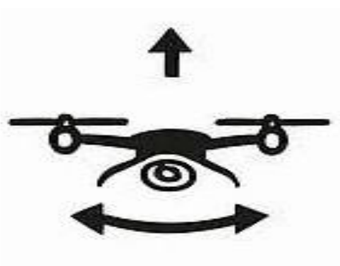
ROLL (USING LEFT JOYSTICK)

By pushing the left joystick to the left or the right, the aircraft will rotate around its axis in the manner illustrated on the right



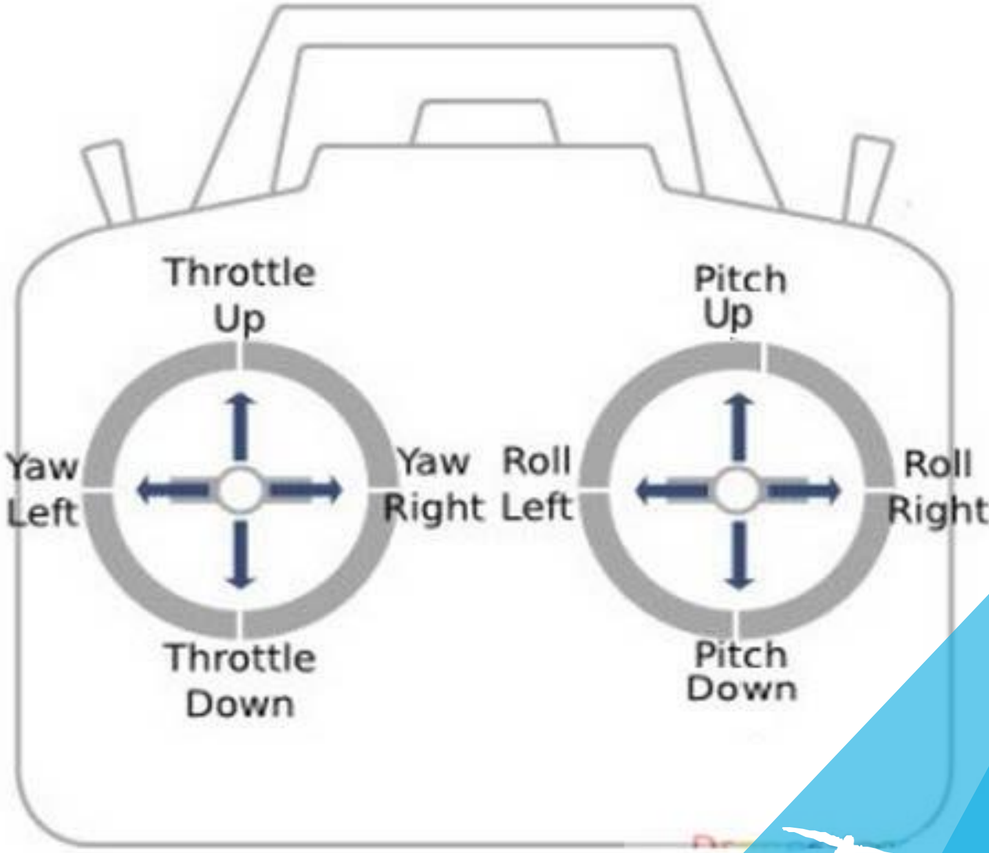
PITCH (USING RIGHT JOYSTICK)

By pushing the right joystick of the aircraft upwards, the aircraft will pitch forward and by pushing the stick down, it will pitch backwards. This is simply the front and back movement of the aircraft.



YAW (USING RIGHT JOYSTICK)

By pushing the right joystick to the left or right, the aircraft will roll sideways



Radio Operation

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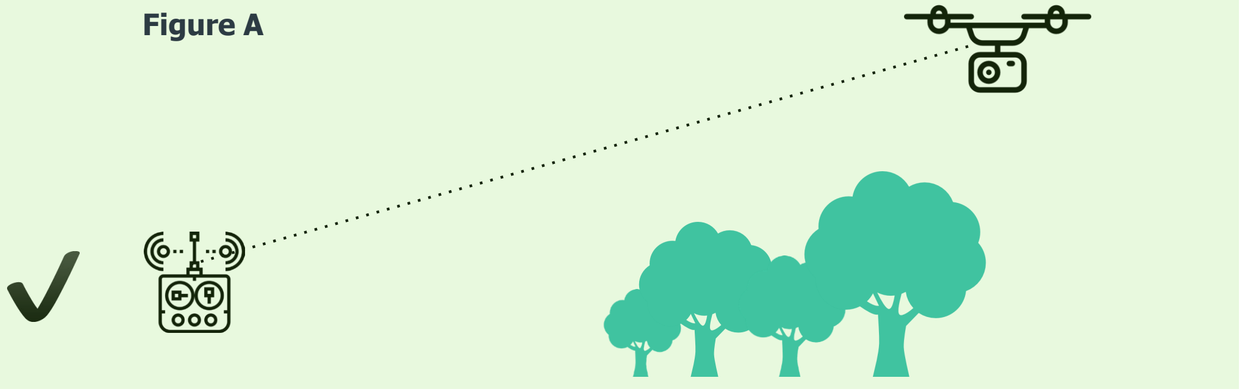
When piloting an RPA system, you must ensure that the aircraft is always in the VLOS (Visual line of sight) . This will ensure that the aircraft and the radio are always in communication. In the event that an obstruction comes in the way of the radio and aircraft, the connection will be disrupted immediately.

Figure A on the right illustrates a perfect radio connection that is necessary during a flight whereby Figure B illustrates an extremely dangerous flight whereby the connection between the PIC (Pilot in command's) radio and the aircraft has been disrupted.

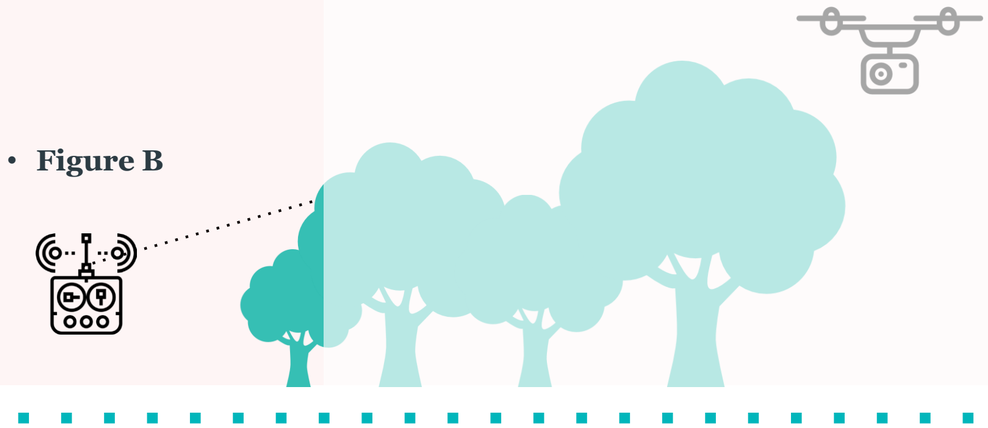
TIP!
It is always advised to stay above the height of the highest obstruction within the area of your proposed flight. This must however be done within the limits of legally allowed flight altitudes.

For your information:
Visual Line of Sight (VLOS) means that the pilot is able to visually see the aircraft at all times while being airborne. This will allow the pilot to avoid any obstructions

Figure A



- Figure B



Failsafe / Recovery

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Figure A

Figure B

LEGEND:

Disconnected Radio Connection

FAILSAFE Flight Path To Landing

In the event that a RPA system loses connection from its radio, most in built flight controllers allow the following two methods of recovery:

a. Immediate Landing :

As illustrated in Figure A, when this recovery feature is active, the aircraft will land immediately upon loss of signal/ connection.

a. Return to home (RTH) :

The RTH feature will activate a recovery system in the aircraft whereby it will first gain altitude and then fly towards the point of take off where it will land. It does this using the pre-recorded GPS coordinate from the time of take off. Figure B illustrates this method of recovery.

Updated Drone Regulations and Safety Standards

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1. Key Updates to Drone Safety Guidelines in the UAE

- Night flying for recreational drones is **strictly prohibited**
- Operators must fly within **designated Green Zones only**
- Maximum allowed altitude is **120 meters (400 feet)** unless specified
- Use of drones in **restricted or no-fly zones** is penalized
- Drones must maintain a **safe distance from people, buildings, and airports**

2. Regulatory Entity - Dubai Civil Aviation Authority (DCAA):

- Governs all drone activities within the **Emirate of Dubai**
- Issues hobbyist and commercial drone approvals in Dubai
- Maintains approved flying zones (Green Zones) and altitude limits
- Enforces compliance through inspections and digital systems

3. Safety Practices for Recreational Drone Flying

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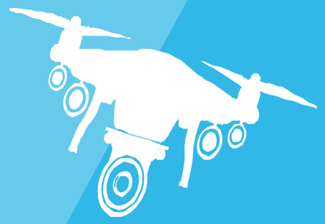
- Conduct **pre-flight checks**: battery levels, propeller condition, GPS signal, weather
- Always fly **within Visual Line of Sight (VLOS)** & Stay **below the 120m (400ft)** altitude limit unless authorized
- **Avoid flying over people**, vehicles, residential areas, or sensitive infrastructure
- To check fly zones – refer to DCAA UAS Zone Map (https://www.dcaa.gov.ae/drone-map) & **DMS** app
- Maintain **safe distances from airports, heliports, and government buildings**
- **Immediately land** the drone if it malfunctions or loses signal
- Keep **firm control** of the drone – do not rely solely on GPS or auto features
- Always carry **registration proof** and identification during flying
- Ensure the drone firmware is **up to date** and calibrated properly



4. Importance of Maintaining Up-to-Date Certification

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Legal Requirement

Staying certified ensures you are legally allowed to operate drones in the UAE.

Regulatory Compliance

Certification confirms that you understand and follow the latest rules and regulations.

Improved Safety Awareness

Keeps your knowledge current on safety protocols and risk prevention practices.

Avoids Penalties

Reduces the risk of fines, confiscation of equipment, or legal consequences.

Boosts Operator Credibility

Demonstrates responsibility and professionalism as a drone hobbyist.

Supports Public Trust and Airspace Safety

Certified pilots contribute to safer skies and better community confidence in drone use.

Designated Recreational Drone Flying Zones in Dubai

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- Recreational drone operations are only permitted in **officially authorized flying zones**, commonly referred to as **Green Zones**
- These areas are designated by **DCAA** (for Dubai) based on safety, public accessibility, and airspace structure
- Pilots must use approved apps such as **DCAA website** or **DMS App** to view real-time maps, fly zone boundaries, and any temporary restrictions
- Flying in unauthorized areas is **strictly prohibited** and may lead to penalties or legal action
- Zone availability is **subject to change**, and operators must verify status before every flight

Approved Recreational Drone Zones and Altitude Limitations

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Location	Altitude Limitation
Within private property (inside approved zones)	Up to the height of the tallest structure on the property
Within private property (outside approved zones)	Not Allowed
Al Qudra Lakes	300 feet (91 meters)
Safa Park	200 feet (60 meters)
Jumeirah Beach	200 feet (60 meters)
The Palm Jumeirah	250 feet (76 meters)
Blue waters Island	200 feet (60 meters)
Dubai Design District	200 feet (60 meters)
Kite Beach	200 feet (60 meters)

Importance of Flying Within Designated Zones

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- Approved zones are chosen for **public safety and minimal interference**
- Helps avoid restricted areas such as **airports, military zones, and residential areas**
- Ensures compliance with **local laws** and promotes **responsible flying**
- Reduces the risk of **injury, damage, or violations**
- Some zones may have **on-site signage or monitoring**; certification may be required for access

Regulation: DCAA - Publications
Drone Map: DCAA - Dubai Drone Map

DCAA Drone Registration Process (Dubai)

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- **Registration is mandatory** to fly a drone within Dubai or when traveling with your drone **out of Dubai**
- Registration must be completed via the official **DCAA website**: www.dcaa.gov.ae
- For guidelines visit: DCAA - Recreational Drone

Required Documents:

- **Emirates ID** (for UAE residents) or **Passport copy** (for tourists)
- **Pilot certificate** issued by a **DCAA-approved academy**
- Clear images of the drone showing its Serial Number (SN); Flight controller SN ; Remote controller SN

Weight Restrictions for Recreational Drones:

- Drones ≤ **5 kg** allowed only in approved flying zones

Issuance Permits for Aviation Safety Operations

This service issues certificates of no objection to regulate the various aviation activities and professions associated with civil aviation to ensure adherence to the international and national laws and legislation.

Issuing No Objection Certificate for Sky Trackers / Space Cannon

Issuing No Objection Certificate for Balloon Operations

Application for a no-objection certificate to fly a drone during an event

Application for a no-objection certificate to fly a drone once for commercial purposes

Application for a permit to fly a Drone for aerial filming or advertising purposes

Application For Inspecting And Identifying Aircraft Spare Parts

Application for a no-objection certificate to conduct a Laser or pyrotechnic display

Application for registration of a drone for personal non-commercial use

Application for the registration of a drone for use for commercial purposes

Application for a no-objection certificate to conduct other activities or events having a minor or major effect on air navigation

Application for a no-objection certificate to conduct an air sports event

Application For A No-objection Certificate To Transport Aircraft, Helicopters

Tips for Maintaining Your Drone & Avoiding Common Mistakes

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Firmware

Keep firmware **updated** and check for app notifications

Drone Parts

Clean camera lens and **check propellers** for damage

Labelling

Label your drone with your contact information in case it gets lost during operation

Calibration

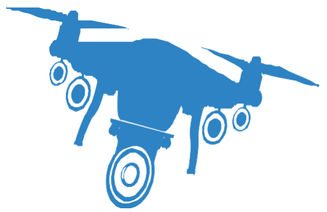
Regularly **calibrate compass and IMU** before flights

Battery

Inspect **battery health** and avoid flying with low charge

GPS

Don't rely solely on **auto return-to-home** in poor GPS conditions



Key Violations to Avoid

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🚫 **Flying Outside Green Zones**
Operating in unauthorized or restricted areas is strictly prohibited.

🚫 **Exceeding Altitude Limits**
Do not fly above 120 meters (400 feet) without special permission.

🚫 **Flying Over People or Roads**
Avoid crowds, moving vehicles, and public gatherings for safety and legal reasons.

🚫 **Operating Near Airports or Heliports**
Maintain a safe distance from all aviation facilities at all times.

🚫 **Flying Without Certification or Registration**
Uncertified operations or unregistered drones may result in fines or confiscation.

🚫 **Flying at Night**
Recreational drone flights are not permitted after sunset.

🚫 **Ignoring Temporary Flight Restrictions**
Always check the DCAA map/app for real-time zone status before flying.

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THANK YOU